DOMCO STOCKTON

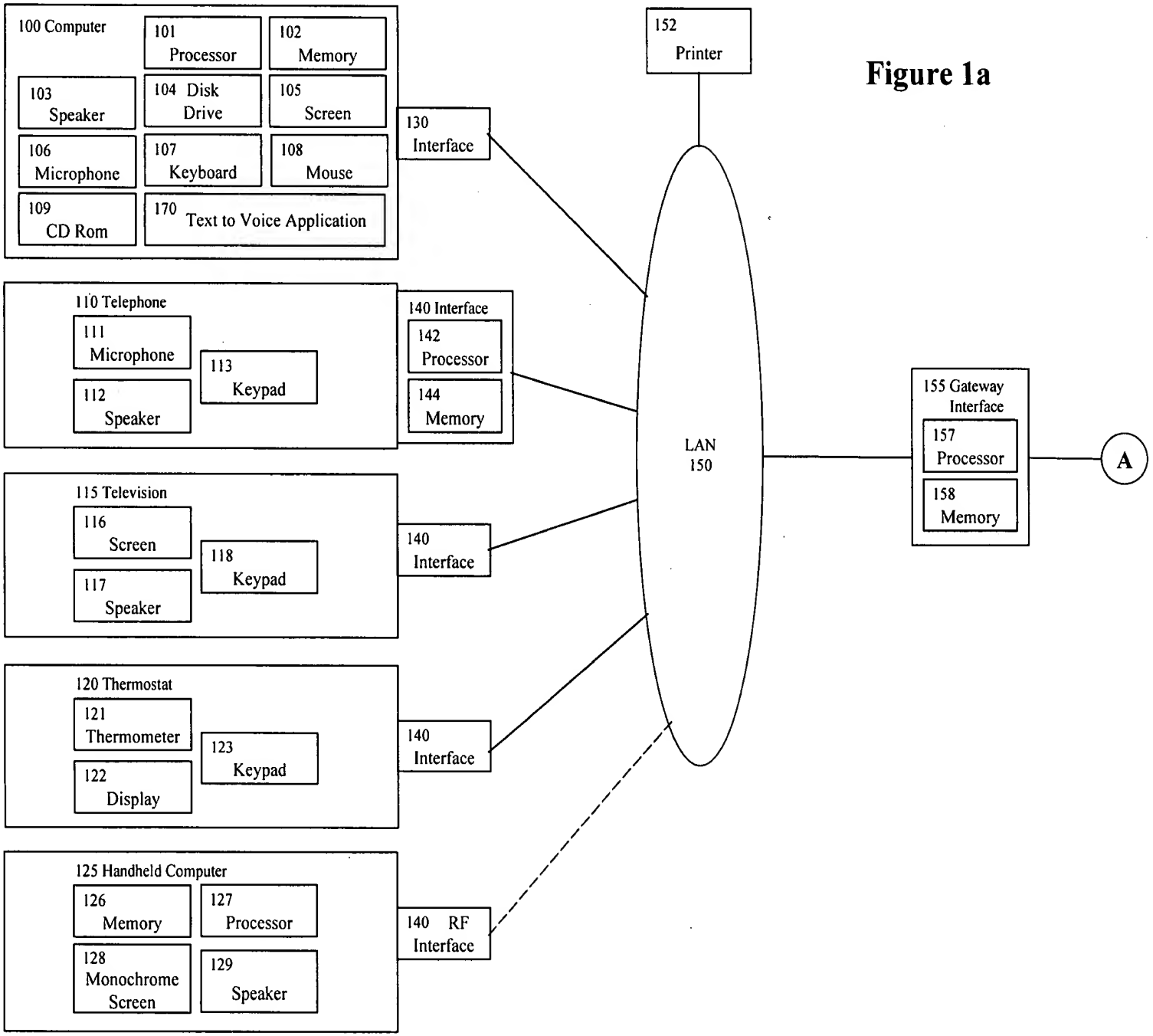

Figure 1a

0040201 9T08600

Figure 1b

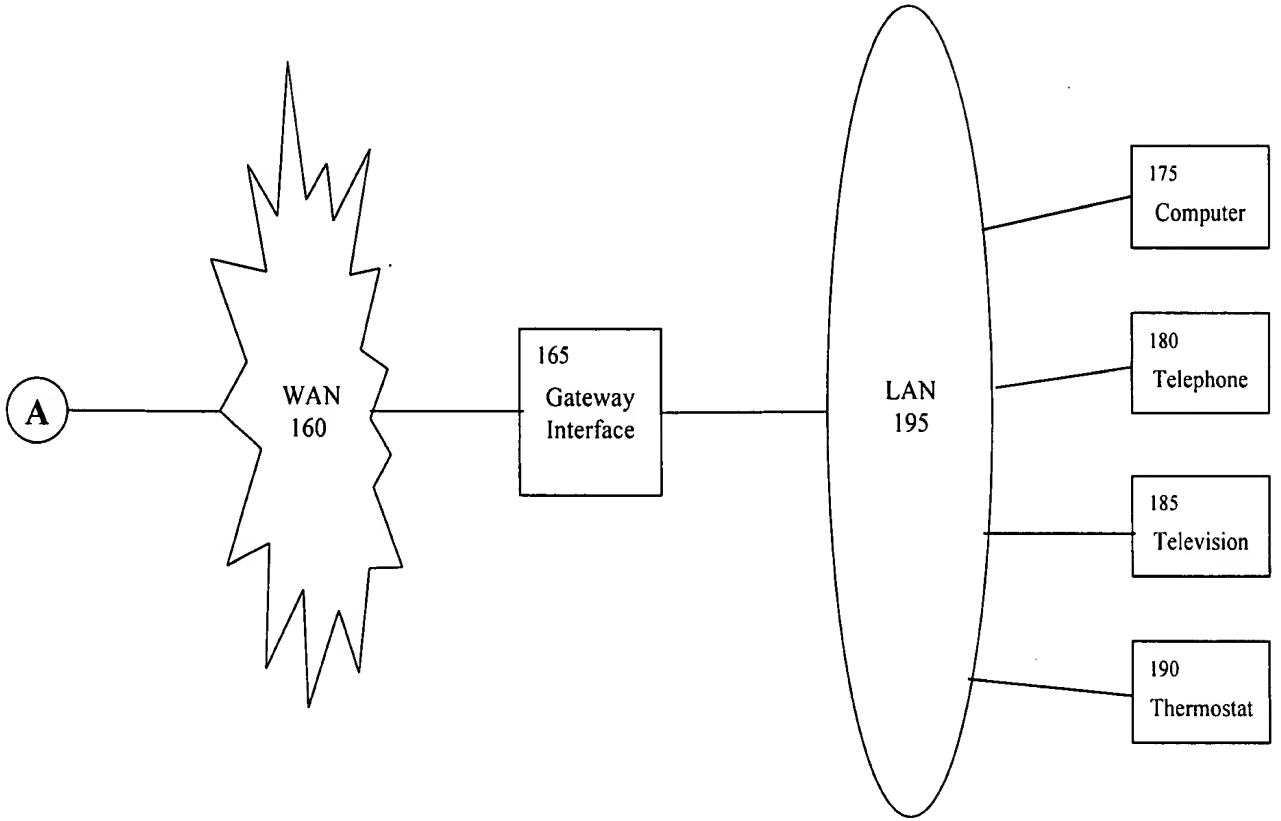

Figure 2

Table of Known Appliances

Appliance ID	Friendly Name	Browse URL	Image URL	Routing Address String	Heartbeat Counter	Leave Flag
10.1.1.2	Downstairs TV	http://10.1.1.2/DownstairsTVResources.html	http://10.1.1.2/. . ./TV.gif	MediaRouter/UDP/IP	6	0
10.1.1.5	Den PC	http://10.1.1.5/. . . /DenPC.html	http//10.1.1.5/. . . /PC.gif	MediaRouter/TCP/IP	5	0

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FIGURE 3a

Table of Resources On An Appliance

Resource Name	Resource Image URL	Configure URL	Content Type Address String
Monochrome Screen	http:// . . . /monitor.gif	http:// . . ./monitor.html	RemoveColor/RemoteTarget (Screen)
Speaker	http:// . . . /monitor.gif	http:// . . . /volume.html	RemoteTarget (Speaker)

FIGURE 3b

Table of Special Cases

Source Media	Special Address
GIF	GIFtoJPEG/RemoteTarget (Screen)/MediaRouter/TCP/IP

Figure 4

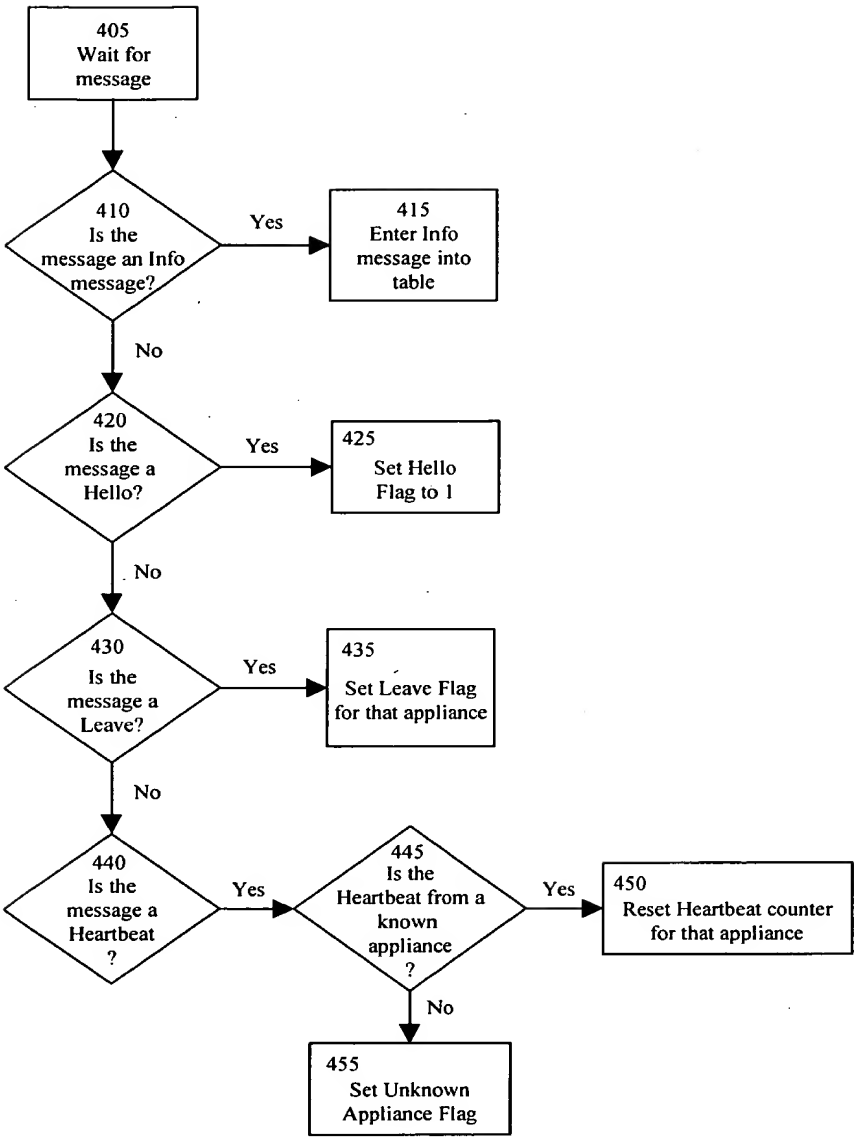
405
Wait for message
410
Is the message an Info message?
Yes
415
Enter Info message into table
No
420
Is the message a Hello?
Yes
425
Set Hello Flag to 1
No
430
Is the message a Leave?
Yes
435
Set Leave Flag for that appliance
No
440
Is the message a Heartbeat ?
Yes
445
Is the Heartbeat from a known appliance ?
Yes
450
Reset Heartbeat counter for that appliance
No
455
Set Unknown Appliance Flag

Figure 5

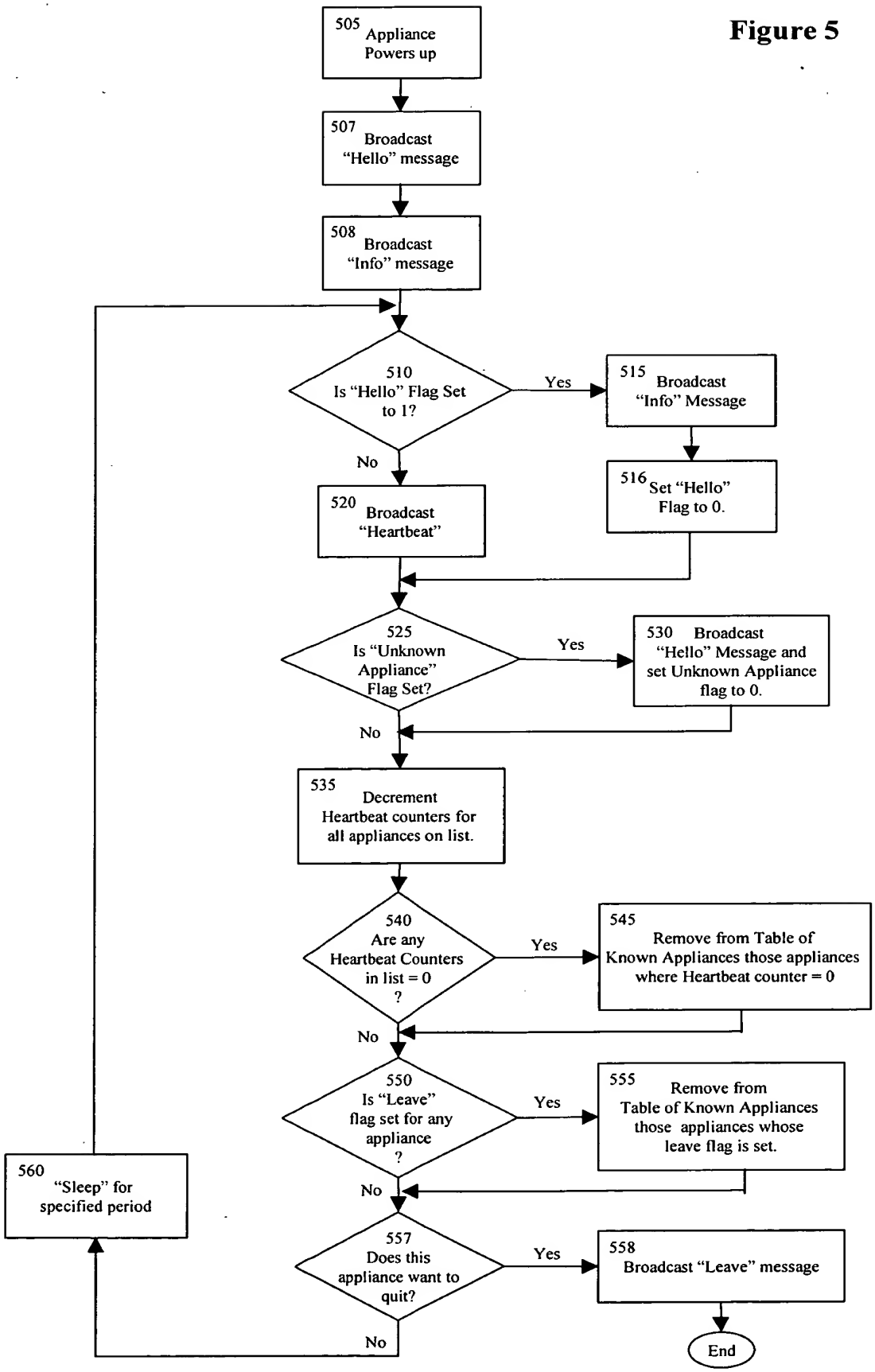
505 Appliance Powers up
507 Broadcast "Hello" message
508 Broadcast "Info" message
510 Is "Hello" Flag Set to 1?
Yes
515 Broadcast "Info" Message
516 Set "Hello" Flag to 0.
No
520 Broadcast "Heartbeat"
525 Is "Unknown Appliance" Flag Set?
Yes
530 Broadcast "Hello" Message and set Unknown Appliance flag to 0.
No
535 Decrement Heartbeat counters for all appliances on list.
540 Are any Heartbeat Counters in list = 0 ?
Yes
545 Remove from Table of Known Appliances those appliances where Heartbeat counter = 0
No
550 Is "Leave" flag set for any appliance ?
Yes
555 Remove from Table of Known Appliances those appliances whose leave flag is set.
No
557 Does this appliance want to quit?
Yes
558 Broadcast "Leave" message
End
No
560 "Sleep" for specified period

Figure 6

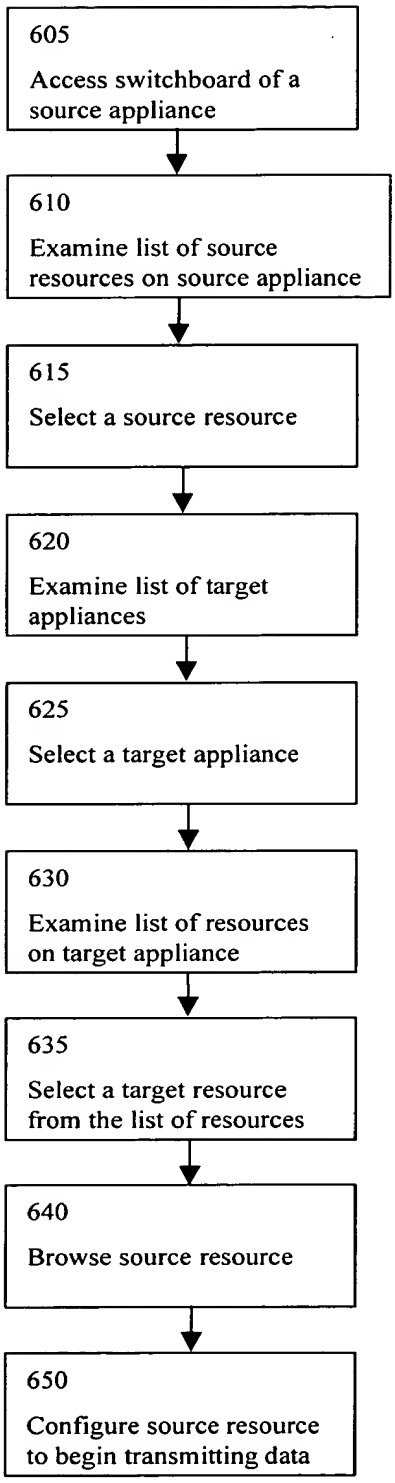
605
Access switchboard of a source appliance
610
Examine list of source resources on source appliance
615
Select a source resource
620
Examine list of target appliances
625
Select a target appliance
630
Examine list of resources on target appliance
635
Select a target resource from the list of resources
640
Browse source resource
650
Configure source resource to begin transmitting data

Figure 7

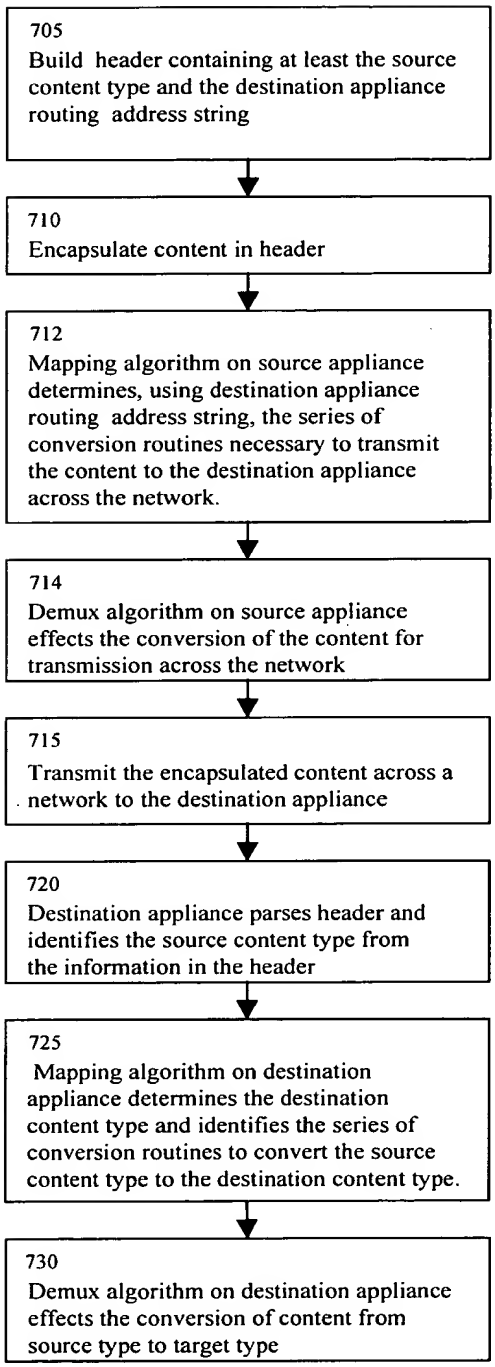
705
Build header containing at least the source content type and the destination appliance routing address string
710
Encapsulate content in header
712
Mapping algorithm on source appliance determines, using destination appliance routing address string, the series of conversion routines necessary to transmit the content to the destination appliance across the network.
714
Demux algorithm on source appliance effects the conversion of the content for transmission across the network
715
Transmit the encapsulated content across a network to the destination appliance
720
Destination appliance parses header and identifies the source content type from the information in the header
725
Mapping algorithm on destination appliance determines the destination content type and identifies the series of conversion routines to convert the source content type to the destination content type.
730
Demux algorithm on destination appliance effects the conversion of content from source type to target type

Figure 8

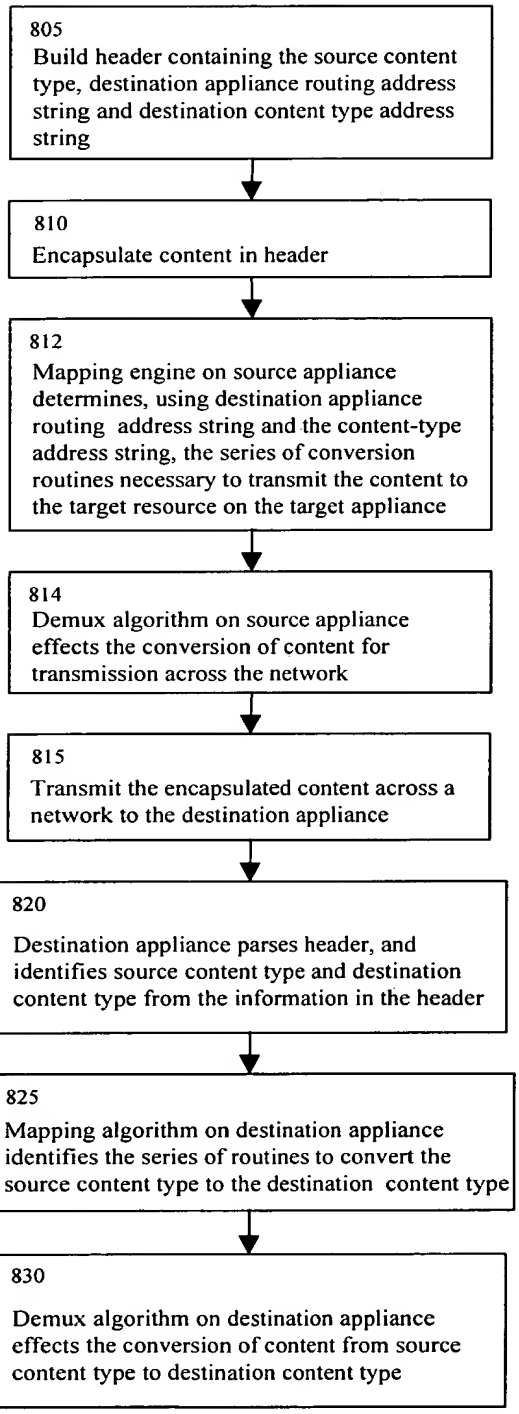
805
Build header containing the source content type, destination appliance routing address string and destination content type address string
810
Encapsulate content in header
812
Mapping engine on source appliance determines, using destination appliance routing address string and the content-type address string, the series of conversion routines necessary to transmit the content to the target resource on the target appliance
814
Demux algorithm on source appliance effects the conversion of content for transmission across the network
815
Transmit the encapsulated content across a network to the destination appliance
820
Destination appliance parses header, and identifies source content type and destination content type from the information in the header
825
Mapping algorithm on destination appliance identifies the series of routines to convert the source content type to the destination content type
830
Demux algorithm on destination appliance effects the conversion of content from source content type to destination content type

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Figure 9A

Switchboard for Computer 101

Sources	Targets
Den PC	Den PC
CD Rom	Screen
Disk Drive	Speaker
Mouse	Disk Drive
Keyboard	Telephone
Microphone	Speaker
	Downstairs TV
	Screen
	Speaker
	Thermostat
	Handheld Computer
	Monochrome Screen
	Speaker

Figure 9B

Switchboard for Telephone 110

Sources	Targets
Telephone	Telephone
Microphone	Speaker
Keypad	
Speaker	Den PC
	Screen
	Speaker
	Disk Drive
	Microphone
	Downstairs TV
	Screen
	Speaker
	Thermostat
	Handheld Computer
	Monochrome Screen
	Speaker

FIG 10a

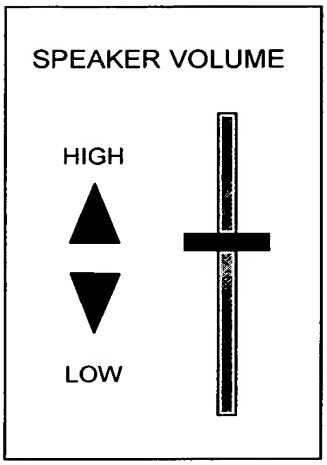


FIG 10b

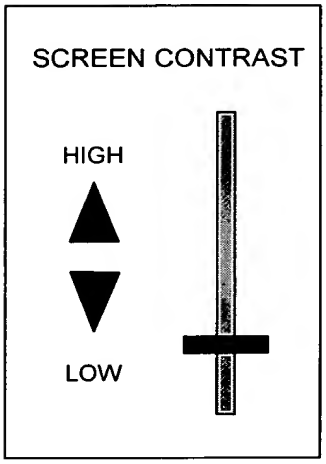


FIG 10c

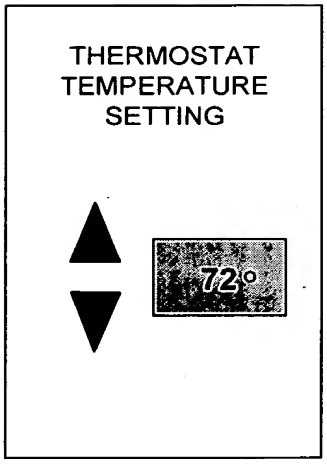


FIG 10d

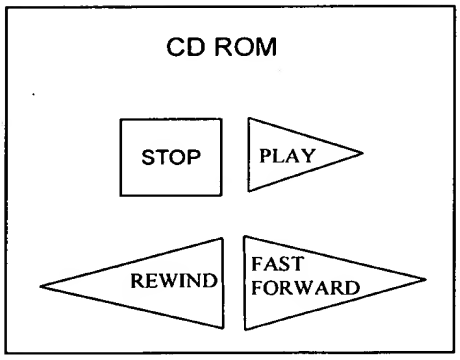


Figure 11

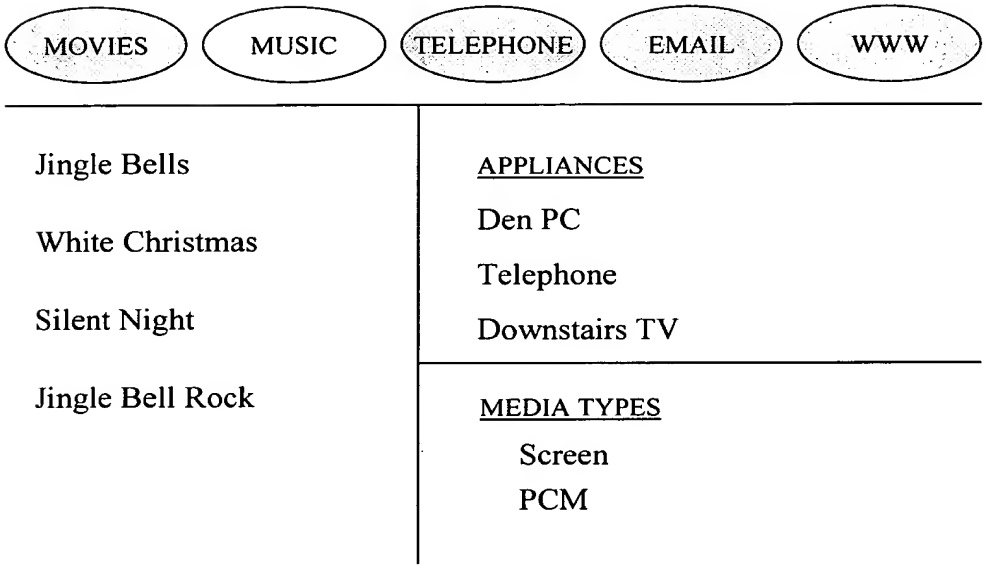

MOVIES
MUSIC
TELEPHONE
EMAIL
WWW
Jingle Bells
White Christmas
Silent Night
Jingle Bell Rock
APPLIANCES
Den PC
Telephone
Downstairs TV
MEDIA TYPES
Screen
PCM

Figure 12a

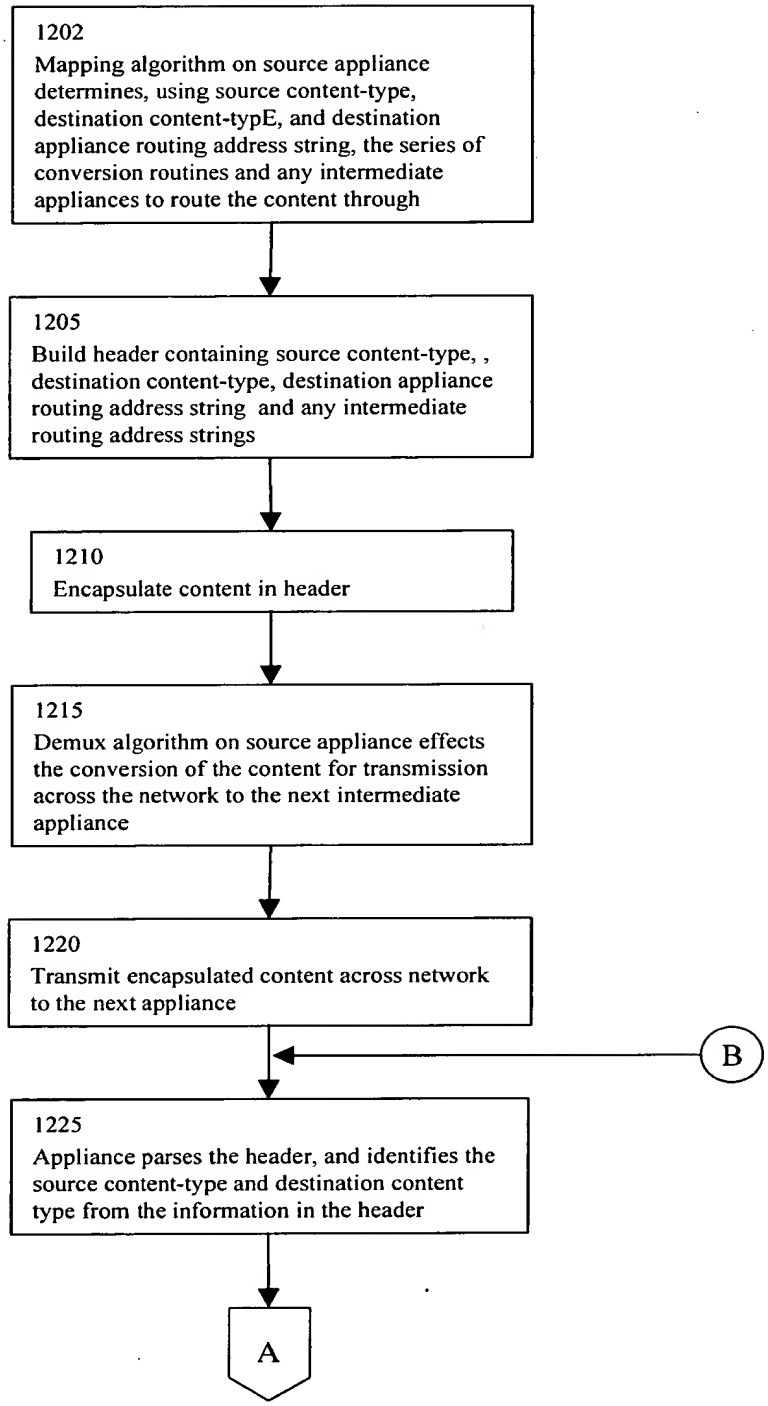
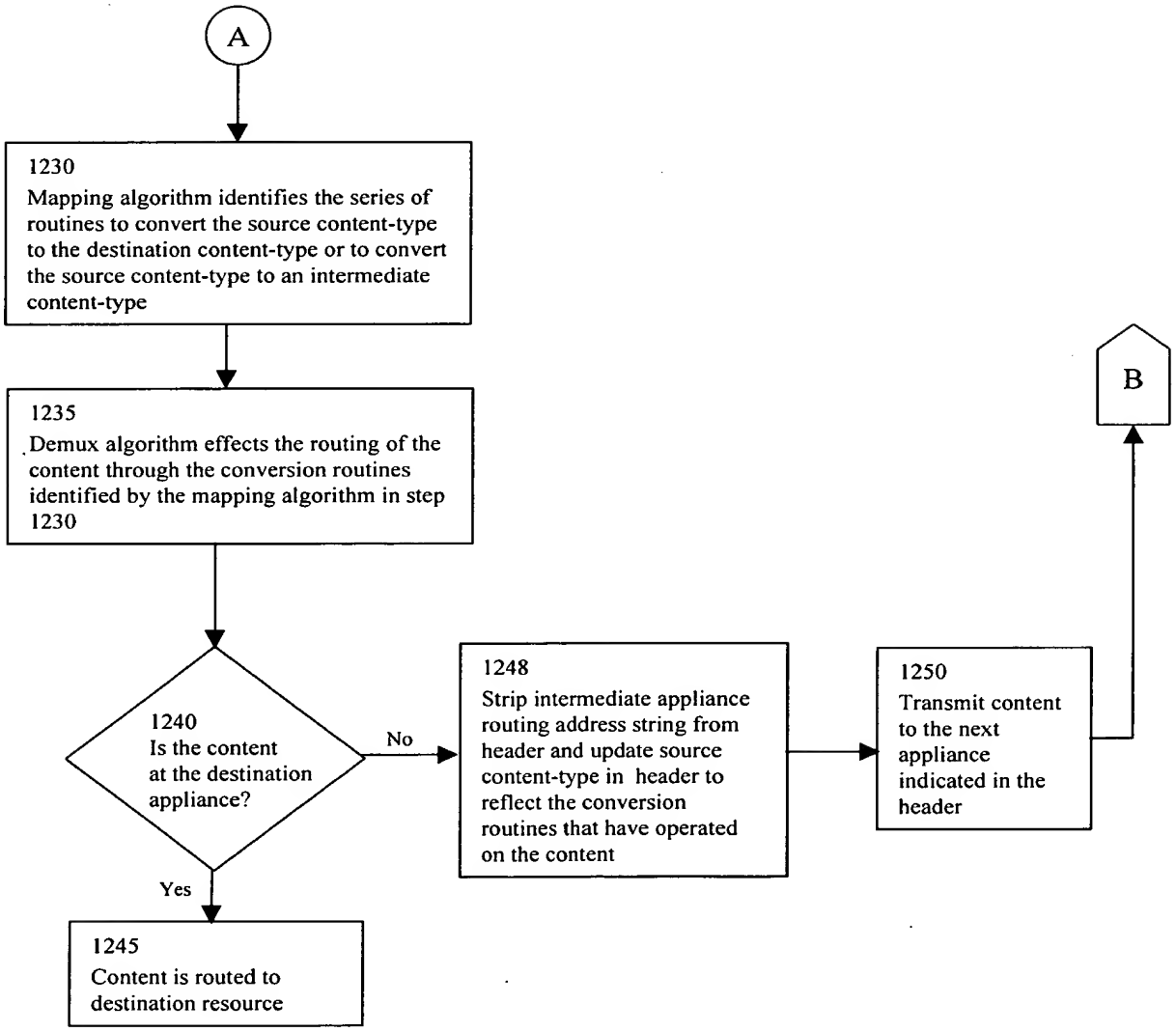

1202
Mapping algorithm on source appliance determines, using source content-type, destination content-typE, and destination appliance routing address string, the series of conversion routines and any intermediate appliances to route the content through
1205
Build header containing source content-type, , destination content-type, destination appliance routing address string and any intermediate routing address strings
1210
Encapsulate content in header
1215
Demux algorithm on source appliance effects the conversion of the content for transmission across the network to the next intermediate appliance
1220
Transmit encapsulated content across network to the next appliance
B
1225
Appliance parses the header, and identifies the source content-type and destination content type from the information in the header
A

Figure 12b


A
1230
Mapping algorithm identifies the series of routines to convert the source content-type to the destination content-type or to convert the source content-type to an intermediate content-type
1235
Demux algorithm effects the routing of the content through the conversion routines identified by the mapping algorithm in step 1230
1240
Is the content at the destination appliance?
No
Yes
1245
Content is routed to destination resource
1248
Strip intermediate appliance routing address string from header and update source content-type in header to reflect the conversion routines that have operated on the content
1250
Transmit content to the next appliance indicated in the header
B